

What Is Claimed

Claim 1. In a Nautilus machine having a presettable weight resistance for use with an exercise having an ascertainable parameter, the improvement of means to selectably vary the preset weight resistance in order to retain the exercise within the ascertainable parameter.

Claim 2. The improved Nautilus machine of Claim 1 wherein the exercise utilizes repetitions and characterized in that the ascertainable parameter is time per repetition.

Claim 3. The improved Nautilus machine of Claim 1 characterized by the addition of means to impart an inertial quality to the selectably variable resistance.

Claim 4. The improved Nautilus machine of Claim 1 characterized in that said automatic adjustment means includes a generator.

Claim 5. The improved Nautilus machine of Claim 1 characterized by the addition of means to separate the selectably variable resistance from direct mechanical connection to the exerciser.

Claim 6. The improved Nautilus machine of Claim 1 characterized in that said automatic adjustment means includes an initial range adjustment sensor.

Claim 7. The improved Nautilus machine of Claim 1 characterized in that each exerciser has a memory area associated therewith and said automatic adjustment means utilizes said memory area.

Claim 8. The improved Nautilus machine of Claim 1 characterized in that said memory area is on a card.

Claim 9. The improved Nautilus machine of Claim 1 characterized in that there are a limited number of presettable weight resistances.

Claim 10. The improved Nautilus machine of Claim 9 characterized in that there is a single presettable weight resistance.

Claim 11. The improved Nautilus machine of Claim 1 wherein the machine has bidirectional forces and characterized in that said means is not symmetric in respect to the bidirectional forces.

Claim 12. The improved Nautilus machine of Claim 11 characterized in that said means substantially eliminate the resistance in one of the bidirectional forces.

Claim 13. The improved Nautilus machine of Claim 1 characterized in that said modifying means modifies the resistance based upon the time of initial repetition and thereafter retains the resistance at a constant level.

Claim 14. The improved Nautilus machine of Claim 1 characterized in that said modifying means begins with a resistance too high for the particular exerciser.

Claim 15. The improved Nautilus machine of Claim 1 characterized by the addition of the previous resistance for a particular exerciser being held in memory and in that said modifying means utilizes said previous resistance to begin the resistance for that particular exerciser.

Claim 16. The improved Nautilus machine of Claim 15 characterized in that said memory is on an exchangeable card.

Claim 17. The improved Nautilus machine of Claim 15 characterized in that said memory is in a computer.

Claim 18. The improved Nautilus machine of Claim 17 characterized by the addition of sensor means to identify the particular exerciser.

Claim 19. In a Nautilus machine having resistance for use with an exercise, the improvement of an inertial means to impart an inertial quality to the resistance.

Claim 20. The improved Nautilus machine of Claim 19 wherein the exercise is bidirectional having a forward and return stroke and characterized by the addition of means to provide a resistance during the return stroke.

Claim 21. The improved Nautilus machine of Claim 19 wherein the exercise has a time per repetition and characterized by the addition of a modifying means to modify the resistance based upon the time per repetition.

Claim 22. The improved Nautilus machine of Claim 21 wherein said modifying means lowers the resistance upon increasing time per repetition.

Claim 23. The improved Nautilus machine of Claim 21 characterized in that said modifying means modifies the resistance based upon the time of initial repetition and thereafter retains the resistance at a constant level.

Claim 24. The improved Nautilus machine of Claim 21 characterized in that said modifying means begins with a resistance too high for the particular exerciser.

Claim 25. The improved Nautilus machine of Claim 21 characterized by the addition of the previous resistance for a particular exerciser being held in memory and in that said modifying means utilizes said previous resistance to begin the resistance for that particular exerciser.

Claim 26. The improved Nautilus machine of Claim 25 characterized in that said memory is on an exchangeable card.

Claim 27. The improved Nautilus machine of Claim 25 characterized in that said memory is in a computer.

Claim 28. The improved Nautilus machine of Claim 27 characterized by the addition of sensor means to identify the particular exerciser.

Claim 29. In an exercise machine having a selectably variable resistance for use with an exercise having an ascertainable parameter, the improvement of a means to automatically adjust the selectably variable resistance in order to retain the exercise within the ascertainable parameter.

Claim 30. The exercise machine of Claim 29 wherein the exercise utilizes repetitions and characterized in that the ascertainable parameter is time per repetition.

Claim 31. The exercise machine of Claim 29 characterized by the addition of means to impart an inertial quality to the selectably variable resistance.

Claim 32. The exercise machine of Claim 29 characterized in that said automatic adjustment means includes a generator.

Claim 33. The exercise machine of Claim 29 characterized by the addition of means to separate the selectably variable resistance from direct mechanical connection to the exerciser.

Claim 34. The exercise machine of Claim 29 characterized in that said automatic adjustment means includes an initial range adjustment sensor.

Claim 35. The exercise machine of Claim 29 characterized in that each exerciser has a memory area associated therewith and said automatic adjustment means utilizes said memory area.

Claim 36. The exercise machine of Claim 35 characterized in that said memory area is on a card.

Claim 37. The exercise machine of Claim 29 wherein the selectably variable resistance is a presettable Nautilus-type weight pack and characterized in that said automatic adjustment means include a means to override the presettable weight pack.

Claim 38. The exercise machine of Claim 37 wherein the machine has bidirectional forces thereon and characterized in that said override means are not symmetric in respect to the bidirectional forces.

Claim 39. The exercise machine of Claim 38 characterized in that said override means substantially eliminate the resistance in one of the bidirectional forces.

Claim 40. The exercise machine of Claim 29 characterized in that the setting of the parameter optimizes the exercise.

Claim 41. The exercise machine of Claim 40 characterized in that the parameter is ascertained empirically.

Claim 42. The exercise machine of 40 characterized in that the parameter is ascertained theoretically.

Claim 43. The exercise machine of claim 29 wherein the exercise has multiple parameters and characterized in that the means optimizes the exercise in respect to the multiple parameters.

Claim 44. The exercise machine of Claim 43 characterized in that the parameters vary during the duration of the exercise.

Claim 45. In an exercising machine for performing an exercise having a desired parameter, the improvement of an analog readout and said analog readout indicating the degree of deviance from the desired parameter.

Claim 46. The exercising machine of Claim 45 characterized in that said analog readout is a tone with said tone varying depending on the degree of deviance.

Claim 47. The exercising machine of Claim 45 characterized in that said analog readout is a string of lights.

Claim 48. The exercising machine of Claim 45 wherein the exercise machine has a resistance and characterized by the addition of a means to automatically vary the resistance to meet the desired parameter if the exercise deviates therefrom by a certain predetermined amount.

Claim 49. In a Nautilus machine having a presettable weight resistance for use with an exercise, the improvement of means to alter the resistance during the exercise.

Claim 50. the Nautilus machine of Claim 49 characterized in that said means is programmed with preset values of alteration.

Claim 51. The Nautilus machine of Claim 49 characterized in that said means is individually set with values of alteration.

Claim 52. The Nautilus machine of Claim 49 wherein the exercise has a parameter and characterized in that the

means alters the resistance to override the machine should the exercise deviate significantly from the parameter.

Claim 53. The Nautilus machine of claim 49 wherein the exercise has desired parameters and characterized in that said means varies the resistance in order to keep the exercise within the desired parameters.